

Complete Listing of Claims Pursuant to 37 C.F.R. §1.121

Pursuant to 37 C.F.R. §1.121 the following is a complete listing of the claims of the present application. In this set of claims, please amend claim 1 as follows. With the amendments to the aforementioned claims, the following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A recombinant porcine adenovirus ~~capable of~~ expressing heterologous DNA, said DNA of interest being stably integrated into ~~an appropriate a site of said recombinant porcine adenovirus genome wherein said site comprises a right hand end of said genome and wherein said right hand end comprises from about 50 genomic map units to about 100 genomic map units~~ wherein said site is selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3.
2. (Currently amended) A recombinant vector including a recombinant porcine adenovirus stably incorporating, and ~~capable of~~ expressing heterologous DNA wherein said heterologous DNA is incorporated ~~into in a right hand end of said recombinant porcine adenovirus genome and wherein said right hand end comprises from about 50 genomic map units to about 100 genomic map units~~ a site selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3.
3. (Canceled)
4. (Previously presented) A recombinant vector as claimed in claim 2 wherein said recombinant porcine adenovirus includes a live porcine adenovirus having virion structural proteins unchanged from those in a native porcine adenovirus from which said recombinant porcine adenovirus is derived.
- 5-24. (Canceled)
25. (Canceled)

26. (Previously presented) A recombinant vector as claimed in claim 2 wherein said heterologous DNA is stably integrated into the non-essential regions of the porcine adenovirus genome.
27. (Canceled)
28. (Previously presented) A recombinant vector as claimed in claim 2 wherein said heterologous DNA is stably integrated into the right hand end of the genome at map units from about 97 to about 99.5.
29. (Canceled)
30. (Previously presented) A recombinant vector as claimed in ~~claim 29~~ claim 2 wherein said heterologous DNA is stably integrated into the adenovirus E3 region of the genome at map units from about 81 to about 84.
31. (Currently amended): A method of producing a recombinant porcine adenovirus vector for use as a vaccine including inserting into a non-essential region of a porcine adenovirus genome, at least one heterologous nucleotide sequence in association with an effective promoter sequence wherein said heterologous nucleotide sequence is inserted in into a right hand end of said genome and wherein said right hand end comprises from about 50 genomic map units to about 100 genomic map units a site selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3.
32. (Original): A method as claimed in claim 31 wherein prior to insertion of said heterologous nucleotide sequence, a restriction enzyme site is inserted into said non-essential region of said porcine adenovirus genome.
- 33-38. (Canceled)
39. (Currently amended): A method of vaccination of pigs against disease including administering to said pigs a first recombinant porcine adenovirus vector stably incorporating, and ~~capable of expression of~~ expressing a heterologous nucleotide sequence encoding at least one antigenic determinant of said disease against which

vaccination is desired, wherein said heterologous nucleotide sequence is inserted into ~~a right hand end of a porcine adenovirus genome in said vector and wherein said right hand end comprises from about 50 genomic map units to about 100 genomic map units~~ a site selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3.

40. (Previously presented): A method as claimed in claim 39 including administering to said pig a second porcine adenovirus vector including at least one heterologous nucleotide sequence which differs from a heterologous nucleotide sequence incorporated in said first recombinant porcine adenovirus vector.
41. (Canceled)
42. (Previously presented): A method as claimed in claim 40 wherein said second porcine adenovirus vector incorporates, and is ~~capable of expression~~ expressing of at least one heterologous nucleotide sequence encoding an immuno-potentiating molecule.
43. (Canceled)
44. (Previously presented) A recombinant vector as claimed in claim 2 wherein said heterologous nucleotide sequence is ~~capable of expression~~ encodes an antigenic polypeptide.
45. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes ~~is capable of expression as an immuno-~~ potentiating molecule.
46. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes antigenic determinants of infectious agents causing intestinal diseases in pigs.

47. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes antigenic determinants of infectious agents causing respiratory diseases in pigs.
48. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes an antigenic determinant of pseudorabies virus (Aujeszky's disease virus).
49. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes an antigenic determinant of glycoprotein D of pseudorabies virus.
50. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes an antigenic determinant of porcine respiratory and reproductive syndrome virus (PRRSV).
51. (Previously presented) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of Hog cholera virus.
52. (Withdrawn) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of porcine parvovirus.
53. (Withdrawn) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of porcine coronavirus.
54. (Withdrawn) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of porcine rotavirus.
55. (Withdrawn) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of porcine parainfluenza virus.
56. (Withdrawn) A recombinant vector as claimed in claim 44 wherein said heterologous nucleotide sequence encodes an antigenic determinant of *Mycoplasma hyopneumonia*.

57. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes FMS-like tyrosine kinase 3 (FLT-3) ligand.
58. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes interleukin-3 (IL-3).
59. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes porcine interleukin-4 (IL-4).
60. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes gamma interferon.
61. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes porcine granulocyte macrophage colony stimulating factor (GM-CSF).
62. (Withdrawn) A recombinant vector as claimed in ~~claim 44~~ claim 2 wherein said heterologous nucleotide sequence encodes porcine granulocyte colony stimulating factor (G-CSF).
63. (New) A recombinant vector of any of claims 1 or 2, wherein said heterologous DNA is incorporated into a PAV3 genome region spanning mapping units 50-55 of PAV3.
64. (New) A recombinant vector of any of claims 1 or 2, wherein said heterologous DNA is incorporated into a PAV3 genome region spanning mapping units 55-65 of PAV3.
65. (New) A recombinant vector of any of claims 1 or 2, wherein said heterologous DNA is incorporated into a PAV3 genome region spanning mapping units 72-85 of PAV3.
66. (New) A recombinant vector of any of claims 1 or 2, wherein said heterologous DNA is incorporated into a PAV3 genome region spanning mapping units 81-84 of PAV3.

67. (New) A method as claimed in any of claims 31 or 39, wherein said heterologous nucleotide sequence is incorporated into a PAV3 genome region spanning mapping units 50-55 of PAV3.
68. (New) A method as claimed in any of claims 31 or 39, wherein said heterologous nucleotide sequence is incorporated into a PAV3 genome region spanning mapping units 55-65 of PAV3.
69. (New) A method as claimed in any of claims 31 or 39, wherein said heterologous nucleotide sequence is incorporated into a PAV3 genome region spanning mapping units 72-85 of PAV3.
70. (New) A method as claimed in any of claims 31 or 39, wherein said heterologous nucleotide sequence is incorporated into a PAV3 genome region spanning mapping units 81-84 of PAV3.
71. (New) A method as claimed in any of claims 31 or 39, wherein said heterologous nucleotide sequence is incorporated into a PAV3 genome region spanning mapping units 97-99.5 of PAV3.
72. (New) A recombinant porcine adenovirus expressing heterologous DNA, said DNA of interest being stably integrated into a site of said recombinant porcine adenovirus genome wherein said site is selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3 wherein said recombinant porcine adenovirus comprises the major late promoter and tripartite leader elements of PAV3.
73. (New) A recombinant vector including a recombinant porcine adenovirus stably incorporating, and expressing heterologous DNA wherein said heterologous DNA is incorporated into a site selected from the group consisting of one or more mapping units selected from the group consisting of mapping units 50-55, 55-65, 72-85, 81-84, and 97-99.5 of PAV3 wherein said recombinant porcine adenovirus comprises the major late promoter and tripartite leader elements of PAV3.